IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A temperature measuring method of measuring a temperature of a susceptor which is disposed in a conductive vessel and on which a substrate to be processed is to be placed, the conductive vessel being set to a ground potential and having a space formed therein in which a plasma is generated by application of a radio frequency power, the method comprising:

forming an opening in a portion of the conductive vessel facing a predetermined temperature measured portion on a rear face side of the susceptor, the opening having a size not allowing ~~a diameter of 1/50 or less of a wavelength of~~ the radio frequency power to ~~suppress a leakage~~ leak to an external part; and

detecting, at an external part of the opening, an infrared ray emitted from the temperature measured portion to measure the temperature of the susceptor by a radiation thermometer.

Claim 2 (Cancelled).

Claim 3 (Currently Amended): A temperature measuring method as set forth in claim 1, wherein a frequency of the radio frequency power is ~~in a range of~~ 40 MHz or higher ~~to 100MHz~~.

Claim 4 (Original): A temperature measuring method as set forth in claim 1,

wherein the temperature measured portion of the susceptor has a shape recessed toward a face on which the substrate to be processed is to be placed.

Claim 5 (Original): A temperature measuring method as set forth in claim 1,

wherein the temperature measured portion of the susceptor is structured to act as a blackbody to the infrared ray.

Claim 6 (Currently Amended): A plasma processing apparatus comprising:

a conductive vessel being set to a ground potential and having a space formed therein in which a plasma is generated by application of a radio frequency power;

a susceptor which is disposed in said conductive vessel and on which a substrate to be processed is to be placed; and

a radiation thermometer for measuring a temperature of the susceptor,

wherein the susceptor has a temperature measurement hole disposed at a predetermined portion for measuring a temperature of the susceptor on a rear surface side of said susceptor,

wherein said conductive vessel has an opening that is formed in a portion facing [[a]] the predetermined temperature measured portion and that has a size not allowing the radio frequency power to leak to an external part ~~a diameter of 1/50 or less of a wavelength of the radio frequency power to suppress a leakage~~, and

wherein said radiation thermometer ~~is directly installed~~ at an external part of the opening ~~to detect~~ an infrared ray emitted from the temperature measured portion to measure a temperature of said susceptor.

Claim 7 (Cancelled).

Claim 8 (Currently Amended): A plasma processing apparatus as set forth in claim 6,

wherein a frequency of the radio frequency power is ~~in a range of~~ 40 MHz or higher ~~to 100MHz~~.

Claim 9 (Previously Presented): A plasma processing apparatus as set forth in claim 6,

wherein the temperature measurement hole of said susceptor has a shape recessed toward a face on which the substrate to be processed is to be placed.

Claim 10 (Previously Presented): A plasma processing apparatus as set forth in claim 6, wherein the temperature measurement hole has a top portion which is structured to act as a blackbody to the infrared ray.

Claim 11 (Previously Presented): The plasma processing apparatus as set forth in claim 6, further comprising an insulating support member for supporting the susceptor, the insulating support member having a through hole such that an infrared ray emitted from the inside of the temperature measurement hole pass through toward the radiation thermometer through the temperature measurement opening, the through hole having a diameter slightly larger than the temperature measurement hole.

Claim 12 (Previously Presented): The plasma processing apparatus as set forth in claim 6, wherein said conductive vessel is formed of an anodized aluminum.

Claim 13 (Previously Presented): The plasma processing apparatus as set forth in claim 6, wherein said temperature measurement opening has a diameter of about 10mm.

Claim 14 (Previously Presented): The plasma processing apparatus as set forth in claim 6, wherein said susceptor is formed of an aluminum and the top portion thereof is anodized.

Claim 15 (Previously Presented): The plasma processing apparatus as set forth in claim 6, wherein a black body tape is pasted on a top portion of said temperature measurement hole.

Claim 16 (New): The temperature measuring method as set forth in claim 1,

wherein a diameter of the opening is set to 1/50 or less of a wavelength of the radio frequency power.

Claim 17 (New): The plasma processing apparatus as set forth in claim 6,

wherein a diameter of the opening is set to 1/50 or less of a wavelength of the radio frequency power.

Claim 18 (New): The temperature measuring method as set forth in claim 1,

wherein said susceptor is formed of an aluminum so that a top portion of said opening is anodized so as to act as a blackbody to the infrared ray.

Claim 19 (New): The plasma processing apparatus as set forth in claim 6,

wherein the temperature measurement hole of said susceptor has a top portion and said susceptor is formed of an aluminum so that the top portion thereof is anodized so as to act as a blackbody to the infrared ray.